

IN THE CLAIMS

1. (Currently amended) A two-part intervertebral spacer comprising:

a generally ring-shaped first component having upper and lower vertebral engaging surfaces and a thickness between the upper and lower surfaces, the first component being ~~of substantially closed structure and~~ made from bone; and,

a second component engagable within the first component and having a height greater than the thickness of the first component.

2. (Currently amended) A two-part intervertebral spacer comprising:

a first component having upper and lower vertebral engaging surfaces and a thickness between the upper and lower surfaces, the first component ~~being of substantially closed structure comprising~~ bone and being a c-shaped ring; and,

a second component engagable within the first component and having a height greater than the thickness of the first component.

3. (Currently amended) ~~The~~ A two-part intervertebral spacer ~~as recited in Claim 2,~~ wherein ~~at least a portion of an inner surface of the ring defined by the C-shape is threaded.~~ comprising:

a first component having upper and lower vertebral engaging surfaces and a thickness between the upper and lower surfaces, the first component being a c-shaped ring at least a portion of an inner surface of which is threaded; and,

a second component engagable within the first component and having a height greater than the thickness of the first component.

4. (Original) The intervertebral spacer as recited in Claim 3, wherein the second component is a cylindrical locking element having threads on an outer surface thereof, which threads are engagable with the threads on the inner surface of the C-shaped ring.

5. (Currently amended) The intervertebral spacer as recited in Claim ~~2~~ 3, wherein the second component comprises a biocompatible material selected from the group consisting of bone, ceramics, polymers, composites, stainless steel and titanium.

6. (Previously presented) The intervertebral spacer as recited in Claim 5, wherein the first component is formed from bone and is partially demineralized to leave a mineralized core of the first component to provide sufficient support to provide subsidence.

7. (Original) The intervertebral spacer as recited in Claim 5, wherein at least one of the upper and lower vertebral engaging surfaces are wholly or partially surface demineralized to provide a flexible surface to conform to adjacent vertebral endplates.

8. (Original) The intervertebral implant as recited in Claim 4, wherein the locking element includes a throughbore for receipt of bone growth inducing factors.

9. (Currently amended) ~~The An~~ intervertebral implant ~~as recited in Claim 2,~~ wherein the first component comprising:

a first component having upper and lower vertebral engaging surfaces and a thickness between the upper and lower surfaces, the first component being is an intact ring having a bore in an outer surface thereof and being made from bone; and,

a second component engagable within the first component and having a height greater than the thickness of the first component, and the second component is being a dowel configured to engage an inner surface of the bore.

10. (Original) The intervertebral implant as recited in Claim 9, wherein the outer surface of the dowel and the inner surface of the bore are formed with corresponding mating threads.

11. (Original) The intervertebral spacer as recited in Claim 9, wherein the intact ring defines a throughbore for receipt of bone growth inducing factors.

12. (Currently amended) A two-part intervertebral spacer comprising:
a generally C-shaped ring defining a bore and having a predetermined thickness between an upper and a lower vertebral engaging surface, the ring ~~being of substantially closed structure comprising bone; and,~~

a threaded dowel having a diameter greater than the predetermined thickness of, and engagable within, the C-shaped ring.

13. (Previously presented) The intervertebral spacer as recited in Claim 12, wherein the threaded dowel comprises a biocompatible material selected from the group consisting of bone, ceramics, polymers, composites, stainless steel and titanium.

14. (Currently amended) The intervertebral dowel as recited in Claim 13, wherein the C-shaped ring is formed of bone and at least one of the upper and lower vertebral surface engaging surfaces is at least partially surface demineralized.

15. (Original) The intervertebral spacer as recited in Claim 12, wherein an inner surface of the C-shaped ring which defines the throughbore is formed with threads.

16. (Original) The intervertebral spacer as recited in Claim 12, wherein the threaded dowel defines a throughbore for receipt of bone growth inducing factors.

17. (Original) The intervertebral spacer as recited in Claim 12, wherein the threaded dowel includes structure for receipt of insertion instrumentation.

18. (Currently amended) A method of restoring spacing between adjacent vertebrae comprising:

providing a two-part intervertebral spacer having an intact a ring defining a bore and upper and lower vertebral engaging surfaces defining a thickness between the upper and lower surfaces, ~~the ring being of substantially closed structure comprising bone,~~ and a locking implant engagable within the bore of the ring and having a height greater than the thickness of the ring;

positioning the ring within an excised disk space between adjacent vertebrae; and
engaging the locking implant within the ring and with the adjacent vertebrae.

19. (Currently amended) ~~The A method according to Claim 18 wherein the step of engaging includes~~ of restoring spacing between adjacent vertebrae comprising:

providing a two-part intervertebral spacer having an intact ring defining a bore and upper and lower vertebral engaging surfaces defining a thickness between the upper and lower surfaces, and a locking implant engagable within the bore of the ring and having a height greater than the thickness of the ring;

positioning the ring within an excised disk space between adjacent vertebrae; and
engaging the locking implant within the ring and with the adjacent vertebrae;

said engaging including threadedly engaging threads formed on an inner surface of the bore with threads formed on an outer surface of the locking implant.

20. (Original) The method according to Claim 18 wherein, prior to the step of engaging, threads are simultaneously formed on an inner surface of the bore and at least one endplate of adjacent vertebrae.

21. (Original) The method of Claim 18, wherein the bore defined in the ring is formed after the step of positioning the ring.

22. (Previously presented) The intervertebral spacer as recited in Claim 1, wherein the bone is selected from the group consisting essentially of mineralized bone, partially demineralized bone, surface demineralized bone, wholly demineralized bone, cancellous bone, cortical bone and composites.

23. (Previously presented) The intervertebral spacer as recited in Claim 12, wherein the bone is selected from the group consisting essentially of mineralized bone, partially demineralized bone, surface demineralized bone, wholly demineralized bone, cancellous bone, cortical bone and composites.

24. (Previously presented) A two-part intervertebral spacer comprising:
a first component having upper and lower vertebral engaging surfaces and a thickness between the upper and lower surfaces, the first component being a C-shaped ring wherein at least a portion of an inner surface of the ring defined by the C-shape is threaded; and,

a second component engagable within the first component and having a height greater than the thickness of the first component.

25. (Previously presented) The intervertebral spacer as recited in Claim 24, wherein the second component is a cylindrical locking element having threads on an outer surface thereof, which threads are engagable with the threads on the inner surface of the C-shaped ring.

26. (Previously presented) The intervertebral spacer as recited in Claim 25, wherein the locking element includes a throughbore for receipt of bone growth inducing factors.

27. (Previously presented) The intervertebral spacer as recited in Claim 24, wherein at least one of the first component and second component is of substantially closed structure and is formed from bone.

28. (Previously presented) The intervertebral spacer as recited in Claim 27, wherein the first component is formed from bone and is partially demineralized to leave a mineralized core of the first component.

29. (Previously presented) The intervertebral spacer as recited in Claim 27, wherein at least one of the upper and lower vertebral engaging surfaces is wholly or partially surface demineralized.

30. (Previously presented) A two-part intervertebral spacer comprising:
a first component having upper and lower vertebral engaging surfaces and a thickness between the upper and lower surfaces, the first component comprising an intact ring having a bore in an outer surface thereof; and

a second component engagable within the first component and having a height greater than the thickness of the first component comprising a dowel configured to engage an inner surface of the bore,

wherein the outer surface of the dowel and the inner surface of the bore are formed with corresponding mating threads.

31. (Previously presented) A method of restoring spacing between adjacent vertebrae comprising:

providing a two-part intervertebral spacer having a ring defining a bore and upper and lower vertebral engaging surfaces defining a thickness between the upper and lower surfaces and a locking implant engagable within the bore of the ring and having a height greater than the thickness of the ring;

positioning the ring within an excised disk space between adjacent vertebrae; and engaging the locking implant within the ring and with the adjacent vertebrae, wherein the step of engaging includes threadedly engaging threads formed on an inner surface of the bore with threads formed on an outer surface of the locking implant.

32. (Previously presented) A method of restoring spacing between adjacent vertebrae comprising:

providing a two-part intervertebral spacer having a ring defining a bore and upper and lower vertebral engaging surfaces defining a thickness between the upper and lower surfaces and a locking implant engagable within the bore of the ring and having a height greater than the thickness of the ring;

positioning the ring within an excised disk space between adjacent vertebrae; and

engaging the locking implant within the ring and with the adjacent vertebrae, wherein, prior to the step of engaging, threads are simultaneously formed on an inner surface of the bore and at least one endplate of adjacent vertebrae.

33. (Previously presented) A method of restoring spacing between adjacent vertebrae comprising:

providing a two-part intervertebral spacer having a ring defining a bore and upper and lower vertebral engaging surfaces defining a thickness between the upper and lower surfaces and a locking implant engagable within the bore of the ring and having a height greater than the thickness of the ring;

positioning the ring within an excised disk space between adjacent vertebrae; and engaging the locking implant within the ring and with the adjacent vertebrae, wherein the bore defined in the ring is formed after the step of positioning the ring.

34. (Currently amended) A two-part intervertebral spacer comprising:

a generally C-shaped ring defining a bore and having a predetermined thickness between an upper and a lower vertebral engaging surface, the ring ~~being of substantially closed structure comprising bone; and,~~

a threaded dowel having a diameter greater than the predetermined thickness of, and engagable within, the C-shaped ring,

wherein the thickness of the ring varies from a proximal end of the spacer to the distal end of the spacer to form a tapered spacer.

35. (Currently amended) A two-part intervertebral spacer comprising:

a generally C-shaped ring defining a bore and having a predetermined thickness between an upper and a lower vertebral engaging surface, the ring ~~being of substantially closed structure comprising bone; and,~~

a threaded dowel having a diameter greater than the predetermined thickness of, and engagable within, the C-shaped ring,

wherein at least a portion of an inner surface of the C-shaped ring is threaded.

36. (Currently amended) A two-part intervertebral spacer comprising:

a generally C-shaped ring defining a bore and having a predetermined thickness between an upper and a lower vertebral engaging surface, the ring ~~being of substantially closed structure comprising bone; and,~~

a threaded dowel having a diameter greater than the predetermined thickness of, and engagable within, the C-shaped ring,

wherein the inner surface of the C-shaped ring is threaded after insertion of the spacer and simultaneously with formation of threads in adjacent vertebral endplates.

37. (Currently amended) A two-part intervertebral spacer comprising:

a generally C-shaped ring defining a bore and having a predetermined thickness between an upper and a lower vertebral engaging surface, the ring ~~being of substantially closed structure comprising bone; and,~~

a threaded dowel having a diameter greater than the predetermined thickness of, and engagable within, the C-shaped ring,

wherein the surfaces of the spacer possess both concave and convex curvatures designed to conform to adjacent vertebrae in order to maximize surface contact between the spacer and the adjacent vertebrae.